JOURNAL OF
Colloid and Interface Science

EDITOR Milton Kerker

ASSOCIATE EDITOR Josip P. Kratohvil

Clarkson University, Potsdam, New York

ADVISORY BOARD

J. D. Andrade
Salt Lake City, Utah

E. A. Boucher
Brighton, England

J. L. Brash
Ontario, Canada

B. Chu
Stony Brook, New York

P. G. de Gennes
Paris, France

F. J. Holly
Lubbock, Texas

N. Ise
Kyoto, Japan

D. H. Kaelble
Thousand Oaks, California

M. Kahlweit
Göttingen, West Germany

E. A. Lissi
Santiago, Chile

A. Marmur
Haifa, Israel

R. S. Porter
Amherst, Massachusetts

V. Pravdić
Zagreb, Yugoslavia

R. Rajagopalan
Houston, Texas

E. D. Shchukin
Moscow, USSR

J. K. Thomas
Notre Dame, Indiana

P. Wagner
Vienna, Austria

W. R. Wilcox
Potsdam, New York

Victor K. La Mer, Founding Editor

A. C. Zettlemoyer, Editor Emeritus

Volume 126

1988

ACADEMIC PRESS, INC.

Harcourt Brace Jovanovich, Publishers

San Diego New York Boston

London Sydney Tokyo Toronto

Copyright © 1988 by Academic Press, Inc.
All rights reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1988 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0021-9797/88 $3.00

MADE IN THE UNITED STATES OF AMERICA

Contents of Volume 126

NUMBER 1, NOVEMBER 1988

G. BOSSIS, J. F. BRADY, AND C. MATHIS. Shear-Induced Structure in Colloidal Suspensions. I. Numerical Simulation 1

C. MATHIS, G. BOSSIS, AND J. F. BRADY. Shear-Induced Structure in a Colloidal Suspension. II. Light Scattering 16

KINSI MOTOMURA, HIDEMI IYOTA, NORIHIRO IKEDA, AND MAKOTO ARATONO. Thermodynamic Studies on Adsorption at Interfaces. VI. Interface between Cyclohexane–Benzene Mixture and Water 26

J. B. YIANATOS, J. A. FINCH, G. S. DOBBY, AND MANQIU XU. Bubble Size Estimation in a Bubble Swarm 37

P. OSWALD AND M. ALLAIN. Rheology and Structural Defects in a Lyotropic Lamellar Phase .. 45

V. THOMINET, C. STENVOT, AND D. LANGEVIN. Light Scattering Study of the Viscoelasticity of Soluble Monolayers 54

CRAIG MILBERG, JOSIP P. KRATOHVIL, AND PETR ZUMAN. Surface Orientation of Cholanoic Acids from Suppression of Polarographic Maxima 63

M. JARONIEC, R. MADEY, AND J. CHOMA. Thermodynamic Functions Associated with the Exponential Isotherm Equation for Gas Adsorption on Heterogeneous Microporous Solids .. 69

SIDNEY A. SIMON, THOMAS J. MCINTOSH, AND ALAN D. MAGID. Magnitude and Range of the Hydration Pressure between Lecithin Bilayers as a Function of Headgroup Density 74

H. M. PRINCEN, A. M. CAZABAT, M. A. COHEN STUART, F. HESLOT, AND S. NICOLET. Instabilities during Wetting Processes: Wetting by Tensioactive Liquids 84

J. Z. RUAN, M. H. LITT, AND I. M. KRIEGER. Pore Size Distributions of Foams from Chord Distributions of Random Lines: Mathematical Inversion and Computer Simulation 93

MARK G. SCEATS. Particle Diffusion in the Transition Region of Rarefied Gas Dynamics 101

SHIZUKO SATO AND HIROSHI KISHIMOTO. Osmotic and Activity Coefficients of a Nonionic Surfactant, Surfynol 465, at Its Higher Concentrations in Water 108

MAX L. ROBBINS, JAN BOCK, AND JOHN S. HUANG. Model for Microemulsions. III. Interfacial Tension and Droplet Size Correlation with Phase Behavior of Mixed Surfactants 114

MOHSEN YEKTA-FARD AND ANTHONY B. PONTER. The Influences of Vapor Environment and Temperature on the Contact Angle–Drop Size Relationship 134

A. YOKOYAMA, K. R. SRINIVASAN, AND H. S. FOGLER. Stabilization Mechanism of Colloidal Suspensions by Gum Tragacanth: The Influence of pH on Stability 141

A. TONCK, J. M. GEORGES, AND J. L. LOUBET. Measurements of Intermolecular Forces and the Rheology of Dodecane between Alumina Surfaces 150

SRIRAM PADMANABHAN AND ARIJIT BOSE. The Importance of Direct Measurement of Dynamic Contact Angles during the Wetting of Solids by Surfactant Solutions 164

ZUKANG ZHOU AND BENJAMIN CHU. Light-Scattering Study on the Association Behavior of Triblock Polymers of Ethylene Oxide and Propylene Oxide in Aqueous Solution 171

MAREK SITARSKI. Evaporation Dynamics of a Small Nonhomogeneous Droplet in Intense Optical Fields 181

ROLAND KJELLANDER, STJEPAN MARČELJA, AND J. P. QUIRK. Attractive Double-Layer Interactions between Calcium Clay Particles 194

MASATAKA OZAKI, TAMAMI EGAMI, NORIKO SUGIYAMA, AND EGON MATIJEVIĆ. Agglomeration in Colloidal Hematite Dispersions Due to Weak Magnetic Interactions. II. The Effects of Particle Size and Shape 212

TAHUA YANG AND ALEX M. JAMIESON. Diffusion of Latex Spheres through Solutions of Hydroxypropylcellulose in Water 220

S. PANKASEM AND J. K. THOMAS. Fluorescence Probing of the Interfaces of Solid Calcium Carbonate, Calcium Hydroxide, and Calcium Oxide with Benzene and Heptane 231

D. W. ARMSTRONG, R. A. MENGES, AND S. M. HAN. Evaluation of Dye–Micelle Binding Constants Using Diffusion Sensitive Band Broadening Effects 239

AJAY GARG AND EGON MATIJEVIĆ. Preparation and Properties of Uniform Coated Inorganic Colloidal Particles. III. Zirconium Hydrous Oxide on Hematite 243

DOUGLAS W. COOPER AND HANS R. ROTTMANN. Particle Sizing from Disk Images by Counting Contiguous Grid Squares or Vidicon Pixels 251

HORST FÖRSTER AND GUNTHER PETERS. Sorption, Separation, and Conversion of Hydrogen Nuclear Spin Isomers on Zeolites, Alumina, and Silicagel 260

HIROYUKI SHIRAHAMA AND TOSHIRO SUZAWA. Adsorption of Heat-Denatured Albumin onto Polymer Latices 269

H. VALI AND L. BACHMANN. Ultrastructure and Flow Behavior of Colloidal Smectite Dispersions 278

H. MELTZER AND A. SILBERBERG. Adsorption of Collagen, Serum Albumin, and Fibronectin to Glass and to Each Other 292

PEI TANG, DAVID E. COLFLESH, AND BENJAMIN CHU. Temperature Effect on Fractal Structure of Silica Aggregates 304

M. MAHÉ, M. VIGNES-ADLER, A. ROUSSEAU, C. G. JACQUIN, AND P. M. ADLER. Adhesion of Droplets on a Solid Wall and Detachment by a Shear Flow. I. Pure Systems 314

M. MAHÉ, M. VIGNES-ADLER, AND P. M. ADLER. Adhesion of Droplets on a Solid Wall and Detachment by a Shear Flow. II. Rough Substrates 329

M. MAHÉ, M. VIGNES-ADLER, AND P. M. ADLER. Adhesion of Droplets on a Solid Wall and Detachment by a Shear Flow. III. Contaminated Systems 337

MING-HSING CHENG AND SHANG-DA HUANG. Solvent Sublation and Adsorbing Colloid Flotation of Direct Red 346

ARINDAM SEN, SEK-WEN HUI, MARYSUE MOSGROBER-ANTHONY, BRUCE A. HOLM, AND EDMUND A. EGAN. Localization of Lipid Exchange Sites between Bulk Lung Surfactants and Surface Monolayer: Freeze Fracture Study 355

YUH SUN AND H. GARTH SPENCER. Effects of Calcium Ions on the Streaming Potentials of Zirconium Hydrous Oxide–Polyacrylate Formed-in-Place Membranes 361

NOTES

F. GONZÁLEZ-CABALLERO, M. A. CABRERIZO, J. M. BRUQUE, AND A. DELGADO. The Zeta Potential of Celestite in Aqueous Electrolyte and Surfactant Solutions 367

ZHISHENG GAO, JAN C. T. KWAK, AND RODERICK E. WASYLISHEN. An NMR Study of the Binding between Polyelectrolytes and Surfactants in Aqueous Solution 371

SYED I. ALI AND RICHARD L. ZOLLARS. Generation of Self-Preserving Particle Size Distributions during Shear Coagulation 377

HIROYUKI OHSHIMA AND TAMOTSO KONDO. Comparison of Three Models on Double Layer Interaction 382

HEINRICH HÜHNERFUSS. Hydrophilic Hydration of Monolayer Molecules and Its Contribution to Surface Viscosity 384

BOOK REVIEW

MILTON KERKER. *Physical Optics of Ocean Water.* By K. S. Shifrin. Translated by David Oliver 386

NUMBER 2, DECEMBER 1988

J. P. BLITZ, R. S. SHREEDHARA MURTHY, AND D. E. LEYDEN. The Role of Amine Structure on Catalytic Activity for Silylation Reactions with Cab-O-Sil 387

SUK KYU HAN, SANG MYUNG LEE, AND HANS SCHOTT. The Effect of Protein Denaturants on the Cloud Point of a Nonionic Surfactant 393

A. G. GRIVTSOV, L. T. ZHURAVLEV, G. A. GERASIMOVA, AND L. G. KHAZIN. Molecular Dynamics of Water: Adsorption of Water on β-Tridymite 397

VIOLA VOGEL AND DIETMAR MÖBIUS. Local Surface Potentials and Electric Dipole Moments of Lipid Monolayers: Contributions of the Water/Lipid and the Lipid/Air Interfaces 408

JORGE A. HORAS, HUGO A. SAITÚA, AND JOSÉ MARCHESE. Surface Diffusion of Adsorbed Gases on an Energetically Heterogeneous Porous Solid 421

M. LÖSCHE, H.-P. DUWE, AND H. MÖHWALD. Quantitative Analysis of Surface Textures in Phospholipid Monolayer Phase Transitions 432

DETLEF GORSKI, ELISABETH KLEMM, PETER FINK, AND HANS-HEINRICH HÖRHOLD. Investigation of Quantitative SiOH Determination by the Silane Treatment of Disperse Silica 445

MOHAMED I. ZAKI, HASSAN A. EL-AMMAWY, AND THOMAS BAIRD. Texture Assessment of Ceria by Analysis of Nitrogen Sorption Isotherms and High-Resolution Electron Microscopy ... 450

K. THANGARAJ, M. PALANISAMY, R. GOBINATHAN, AND P. RAMASAMY. Substrate Foreign Atoms and Ice Nucleation Activity 463

ERNEST A. BOUCHER AND TIMOTHY G. J. JONES. Equilibrium and Stability Characteristics of Zero-Gravity Fluid Bridges Constrained between Equal Solid Rods 469

JADRANKA TOMAIĆ AND VERA ŽUTIĆ. Humic Material Polydispersity in Adsorption at Hydrous Alumina/Seawater Interface 482

LUUK K. KOOPAL, GORDON T. WILKINSON, AND JOHN RALSTON. Adsorption of Interacting Long-Chain Surfactant Molecules: Isotherm Equations 493

OLASOJI A. AMIRE. A Spectrophotometric Determination of the Acid Strength of an Indicator in a Cetyltrimethylammonium Bromide Water-in-Oil Microemulsion Water "Pool" 508

STEPHEN J. ALLEN, GORDON MCKAY, AND KAYED Y. H. KHADER. The Adsorption of Acid Dye onto Peat from Aqueous Solution–Solid Diffusion Model 517

IVICA RUŽIĆ, HANS JAKOB ULRICH, AND BOŽENA ĆOSOVIĆ. Time Dependence of the Adsorption of Valeric Acid at the Mercury–Sodium Chloride Interface 525

JIH-FEN KUO, MUKUL M. SHARMA, AND TEH FU YEN. Electrokinetic Behavior of a Porous Composite Oxide Matrix 537

CHRISTOPHER T. SKOWLUND AND DALE W. KIRMSE. Electrostatic Effects on the Distribution Coefficients of Large Particles in Charged Pores 547

F. CARRASCO-MARÍN, M. DOMINGO-GARCÍA, I. FERNÁNDEZ-MORALES, AND F. J. LÓPEZ-GARZÓN. Adsorption of Hydrocarbons on Thermally Treated Aluminosilicate 552

DEREK G. LEAIST. Dissolution into Multicomponent Solutions: Benzoic Acid and Aqueous Sodium Hydroxide 561

R. M. PASHLEY, P. M. MCGUIGGAN, R. G. HORN, AND B. W. NINHAM. Forces between Bilayers of Cetyltrimethylammonium Bromide in Micellar Solutions 569

PEN-PONG CHIANG AND MARC D. DONOHUE. The Effect of Complex Ions on Crystal Nucleation and Growth 579

JERZY SZCZYPA, LAURA WĄSOWSKA, AND MAREK KOSMULSKI. Effect of *n*-Alcohols on the Potentiometric Titrations of Rutile 592

RACHEL L. WILLIAMS AND DAVID F. WILLIAMS. The Effect of Albumin on the Wettability of Pure Metal and Metal Oxide Surfaces 596

J. M. J. VANKAN, J. J. PONJEÉ, J. W. DE HAAN, AND L. J. M. VAN DE VEN. On the Nature of Chemical Binding of Organic Silanes to Water-Free Silica Surfaces: A High-Resolution Solid-State NMR Spectroscopic Study 604

STEVEN LUBETKIN AND MARK BLACKWELL. The Nucleation of Bubbles in Supersaturated Solutions 610

ROBIN DAVIES, DAVID E. GRAHAM, AND BRIAN VINCENT. Stability of Mixtures of Water/Oil and Brine/Oil Emulsions 616

T. C. JAO AND K. L. KREUZ. Rigidity of Alkylaryl Sulfonate Micelles Monitored by Intrinsic Fluorescence Probes 622

JACQUES-EMILE PROUST, ERIC PEREZ, YVAN SEGUI, AND DOMINIQUE MONTALAN. Formation and Characterization of an Ultrathin Polysiloxane Film onto Mica 629

NOTES

K. V. VISWANATHAN AND P. SOMASUNDARAN. A New Method of Determining the Effective Hydrophobicity of Surfactants and Chelating Agents by HPLC 634

THOMAS MICHAEL BENDER AND R. PECORA. The Effect of Aging on the Mutual Diffusion Coefficients in Aqueous Solutions of Low-Molecular-Weight Analogs of Polyethylene Glycol 638

DALE TEETERS, JOEL F. WILSON, MARK A. ANDERSEN, AND DAVID C. THOMAS. A Dynamic Wilhelmy Plate Technique Used for Wettability Evaluation of Crude Oils 641

BAR AIKEN AND EGON MATIJEVIĆ. Preparation and Properties of Uniform Coated Inorganic Colloidal Particles. IV. Yttrium Basic Carbonate and Yttrium Oxide on Hematite ... 645

LETTER TO THE EDITOR

L. FENG, C. Z. HU, AND J. D. ANDRADE. Scanning Tunneling Microscopic Images of Adsorbed Serum Albumin on Highly Oriented Pyrolytic Graphite 650

BOOK REVIEWS

T. W. HEALY. *Aquatic Surface Chemistry: Chemical Processes at the Particle–Water Interface.* Edited by Werner Stumm 654

STIG E. FRIBERG. *Physics of Amphiphilic Layers. Proceedings of the Workshop, Les Houches, France, February 10–19, 1987.* Edited by J. Meunier, D. Langevin, and N. Boccara .. 654

AUTHOR INDEX FOR VOLUME 126 655

CUMULATIVE AUTHOR INDEX FOR VOLUMES 121–126 657

CUMULATIVE SUBJECT INDEX FOR VOLUMES 121–126 665